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# HOSPITAL AND TRAINING SCHOOL ADMINISTRATION

IN CHARGE OF

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## SOME DETAILS OF OPERATING ROOM MANAGEMENT

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*New York, N. Y.*

*Light.* The operating rooms should be situated so as to have a high north or west window, to get good natural light without sun. Various inverted bowls with electric light are good for night work, perhaps a plain chandelier with holophane cross-section globes gives a softer and more diffused light. At least one hand drop light for use in fine close work is an essential part of the operating room equipment.

Why should we not have a room lighted invisibly around the junction of the ceiling and walls with the light thrown up against the white ceiling and reflected on the tables below? With the addition of a central invisible light, this would be adequate in a room not too large. A light gray tone for the walls proves to be much easier for the eyes and therefore is being adopted in many hospitals.

*Heat.* The temperature is very important to prevent exposure and shock to the patients, at least 70° to 72°F. being desirable to maintain. A north corner room would be difficult to keep warm enough; any heat over 75° is, moreover, uncomfortable for the doctors and nurses to work in on account of the humidity from the steam of the near-by sterilizing apparatus. The radiators should be placed in the wall under the windows, because, if in the room itself, they are difficult to keep free from dust, and there is also danger of the assistants at an operation getting burnt if too close, as may be unavoidable in a very small room.

*Ventilation.* The right kind of ventilation and how to maintain it is still a vexing problem. If the hospital has a system of artificial ventilation already installed, some one in authority should see to it that this is kept running and not turned off by a bigoted engineer to save expense. For the smaller hospital a wooden frame covered with two layers of white cheesecloth fastened on by thumb tacks so that it

is easily removed and washed, may be slipped under the sash. If the cheesecloth is dampened before an operation, the grosser dirt of the street will be effectively kept out.

*Cleaning.* The operating-room-floor should be cleaned after each case; the first pail being of water and soap with ammonia added to remove blood stains, then one for rinsing, of a solution of phenol or sulphur-naphthol. A bi-weekly hosing and scrubbing with a brush are effective for concrete or mosaic floors. This heavy work should preferably be done by a man; in case operations follow each other in quick succession, this man should be an orderly or male nurse with an intelligent respect for the table of sterile dry goods. Fumigation after a septic case is fast going out of favor, but the habit of cleaning by burning sulphur which has come down to us since the days of Homer, takes some time to be eradicated from our race consciousness. Since 1914, the Board of Health of New York City has discontinued the practice of fumigating houses after contagious diseases.

The cleaning of the room may be completed by a wet dusting with a weak solution of some phenol radical, any of which are not only cheaper than carbolic, but have much greater germicidal power. This wet dusting is one of the duties of the pupil nurse; all ledges of doors, windows, clocks and woodwork, as well as glass shelves, tables and jars, should be conscientiously wiped early each morning, and again in the afternoon.

*Instruments.* The question of how to clean instruments is important for two reasons. In order to remove the blood, they must not be put into hot water before being first rinsed in cold, being brushed at the same time with a soft bristled brush. All instruments may then be rinsed in a pail of hot soap suds and dried, excepting those used on a septic case, which should be boiled for ten minutes after the rinsing in cold water. No carbolic or other acid should be used, as it is bad for the steel edges and the nickel plate. The pupil nurse should have not longer than a week of the duty of cleaning instruments; this will enable her to instruct other people when she has graduated. If the nurse puts the instruments away after they are cleaned, she will become familiar with the different kinds and may find the names of unfamiliar ones by referring to a catalogue. Usually an intelligent maid should clean the instruments, as it is a waste of time for the nurse to continue doing such routine work in any modern school of nursing.

In sterilizing instruments before operation, ten minutes immersion in boiling water is a safe rule. The addition of soda which has long been advocated, tends to leave a brown deposit on the instruments and in the container. Trays which may be raised by foot power out

of the water are the best and should be placed closely adjacent to each operating room. The method still used of having one sterilizing room to supply six operating rooms is very inefficient.

Knives should never be boiled unless at the particular request of a surgeon, neither should they be placed in carbolic acid, but instead, dropped into a tray of 70 per cent alcohol for two minutes.

A catalogue of instruments and needles will be furnished any operating nurse on request to one of the large surgical instrument makers, and provided it is not too accessible to an extravagant surgical committee, will be of great benefit to the nurse for reference.

In volume XVI, No. 6, of the JOURNAL, March, 1916, a record of instruments lent outside the hospital was recommended. Records should also be kept of instruments borrowed in other parts of the hospital, by whom taken, and the date returned. All instruments sent for repair must be carefully listed and checked on return in order to keep the count complete.

The cystoscope is a delicate and expensive instrument which had best be cleaned by the head nurse herself. First, rinse it by letting cold water run through the eyes, taking care after it is superficially cleaned to get pure alcohol into all the grooves and parts. A long metal probe or applicator with cotton on the end is essential for this, as well as a regulation pipe cleaner. When dry, the parts of the cystoscope may be assembled and folded in a clean towel. Here is a question for consideration: Why do we fumigate our cystoscopes with little formalin pellets when alcohol is such an efficient germicide?

The cautery is another piece of delicate apparatus, whether a benzine paquelin or an electric, which needs daily testing and frequent repair. In Portland, Oregon, a specially shaped soldering iron with a blast lamp is used by several surgeons, as it proves more reliable than the expensive cautery.

*Supplies.* There should be an oxygen tank ready for emergency, one tank to every three operating rooms, or at least one if the hospital is small. The tank needs daily testing if we are to have all possible means of saving human life ready at hand. The precaution to have a dose of strychnia  $\frac{1}{60}$  gr. ready for every operation may seem extravagant, but it is really cheap in case of emergency.

It is advisable to keep a pencil and pad of paper tied close to the side of the thermostat, on which the number of bottles of salt solution on hand may be recorded every evening and where each flask taken away during the night may be recorded also. This will prevent the conscientious operating nurse from having misunderstandings with the superintendent or the night supervisor.

*Rubber.* New rubber tubing should be soaked in chlorinated soda, scrubbed, rinsed, then boiled and kept in a jar of sterile water, which is changed once in two weeks. Glassware may be similarly treated without soaking in chlorinated soda. Rubber tissue must be washed in cold water, soaked in corrosive alcohol, rinsed in sterile water, dried by a surgically clean nurse and placed in biniodide of mercury.

Rubber gloves may be boiled ten minutes and if preferred dry, should be dried by a sterile nurse and done up in groups in sterile bags or towels, ready for operations, and kept two to three days in advance of the demand. Sterilizing gloves in the autoclave has proved too destructive to the rubber. After an operation the gloves should be washed in soap and cold water then rinsed in hot water and dried. If used in a septic case they must be boiled before drying. The mending of gloves, may be equally well done by a nurse or skillful maid.

*Glass.* Glassware such as tubes of catgut, are washed, soaked in corrosive sublimate 1-1000 four hours, then transferred with sterile forceps to uncolored corrosive of the same strength, into jars which have first been cleaned, and rinsed with alcohol. While some hospitals still impose the Herculean task of preparing catgut on their operating nurses, many feel that it is better economy to buy a standard quality of prepared gut, which is uniform, thereby eliminating the waste of time and material.

*Other Equipment.* At St. Luke's Hospital, New Bedford, Mass., and some other hospitals, the packages of sterile dry goods are kept on shelves away from dust in cases with glass doors.

Brushes which are used for scrubbing the hands last longer when boiled than with any other treatment. They should each be placed in a separate cloth bag, boiled ten minutes, and used but once. A mixture of two parts of corn meal to one part of dry mustard, makes a good cleanser for the hands, and has the advantage of being non-irritant.

*Nurses.* The manner in which nurses are prepared for operating duty must of course vary according to the size of the hospital. If the hospital has a sufficient number of operations a day to take much of the head nurse's attention, she should have a graduate or a senior pupil assistant, who can take part of the burden of instruction and scrub up to assist. Before a nurse has any operating duty, she will often be called upon to chaperone patients from the wards and arrange them in position on the table. It seems wise, therefore, to take the class of junior nurses or even probationers to the operating room for one demonstration by the head nurse. Later, when the pupil comes for her operating service, she should be shown needles, samples

of suture material, drains, and unsterile dry goods. At the Massachusetts General Hospital, Boston, a card has been prepared with various kinds, different sizes and shapes of needles sewed on it, with the corresponding name and size neatly typed beside each one, which is given the pupil to study when she comes. Before a nurse scrubs for her first operation, she needs to be drilled in the principles of asepsis, and review some of her bacteriology to understand why she must develop her surgical conscience. She needs to know what will be needed for every operation, and also to be told the particular requirements of each individual surgeon whom she will have to assist. A list in book form had best be kept of these peculiarities. The method of sponge count in use in the hospital must be clearly explained to her and the reasons for its importance fully given. In the beginning, it is safer for the pupil to be an unsterile nurse and to watch a half dozen operations. The first time that she assists, it should be with another nurse, preferably the instructor, to aid her in forming correct habits with new associations and stimuli.

The pupil nurse must also be instructed about the sterilization and preparation of all supplies, particular attention being given to running the autoclave. The head nurse should make a diagram of the autoclave, numbering each separate valve with an explanation underneath. She should then demonstrate and let the pupil follow directly with practice in running the autoclave under close supervision. The amphitheatre orderly, or some responsible person besides the nurses, should also be instructed how to run the autoclave, so as to be able to do it in case of emergency or to assist on a heavy day.

What nurse shall be called for an emergency case at night? The pupils who are on regular operating duty at the time are usually worked to the last degree of strength. In some hospitals they are called in turn, staying in on certain evenings. If there is an assistant night supervisor she might be called on first, then waken a day pupil for a second possible emergency. The time lost should be made up to the pupil that very day or week, even at great sacrifice, or her ability to carry through her nursing education will be seriously impaired. Three years ago, a nurse fainted during an operation in one of the well known New York hospitals. On inquiry, it was found that she had been assisting ten or twelve hours the day before, had stayed on through the evening for emergency cases, then still later, to make up and sterilize supplies, getting to bed at 4 a.m. She was on duty again by 7, after two hours of inadequate rest; let us hope that this sort of barbarous treatment will be recognized as unjust to both pupil and school. Some hospitals have solved this problem of night operations, by having a

surgical nurse on duty from 2 p.m. till midnight. Why not let the night orderly sterilize dry goods? That has been successfully carried out at Mt. Sinai Hospital, New York.

*Head nurse.* In addition to some teaching, much supervision, receiving and adjusting complaints, and preserving harmony, the head nurse must direct the nurses, the work of the maids and men who scrub windows, brass and floors, keep lists of laundry, new supplies needed, make requisitions, order repairs, watch operations, as well as list them, keep lists of the instruments, and the surgeons on duty, and preserve a manner of undisturbed composure at all times, herself.

To get the patients from the wards to the operating rooms in time for the surgeons, yet not too long in advance, takes thought and judgment. If the nurse will prepare the name of each patient, the ward, and the time to be called, on separate pieces of paper and keep them in order on her desk, the orderly can take the written call when it is time and avoid the mistake of bringing the wrong patient.

In a large hospital, the head nurse will be called upon to give a lecture and demonstration to the orderlies about their duties during an operation, the strength of certain solutions used, and the many positions in which the patient may have to be placed on the table.

The executive duties of the chief surgical nurse are so manifold and exacting that no hospital can afford to have its operating room run without a well-paid graduate supervisor.

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#### A CORRECTION

We greatly regret that some incorrect items in regard to the Samaritan Hospital, Sioux City, Iowa, were reported in the news items of the November JOURNAL. Our Iowa correspondent trusted a newspaper report, not realizing that it is the JOURNAL's custom to obtain news items at first hand and not to quote from other periodicals. We are glad to report news from all sections of the country, but we urge those who send us items to make sure that they are accurate and up to date. In this instance, the campaign for a new building has been started by the hospital board, not the training school board. Miss Slattery is not acting superintendent nor is Miss Carhart night supervisor. The superintendent is Frances C. Matthews.